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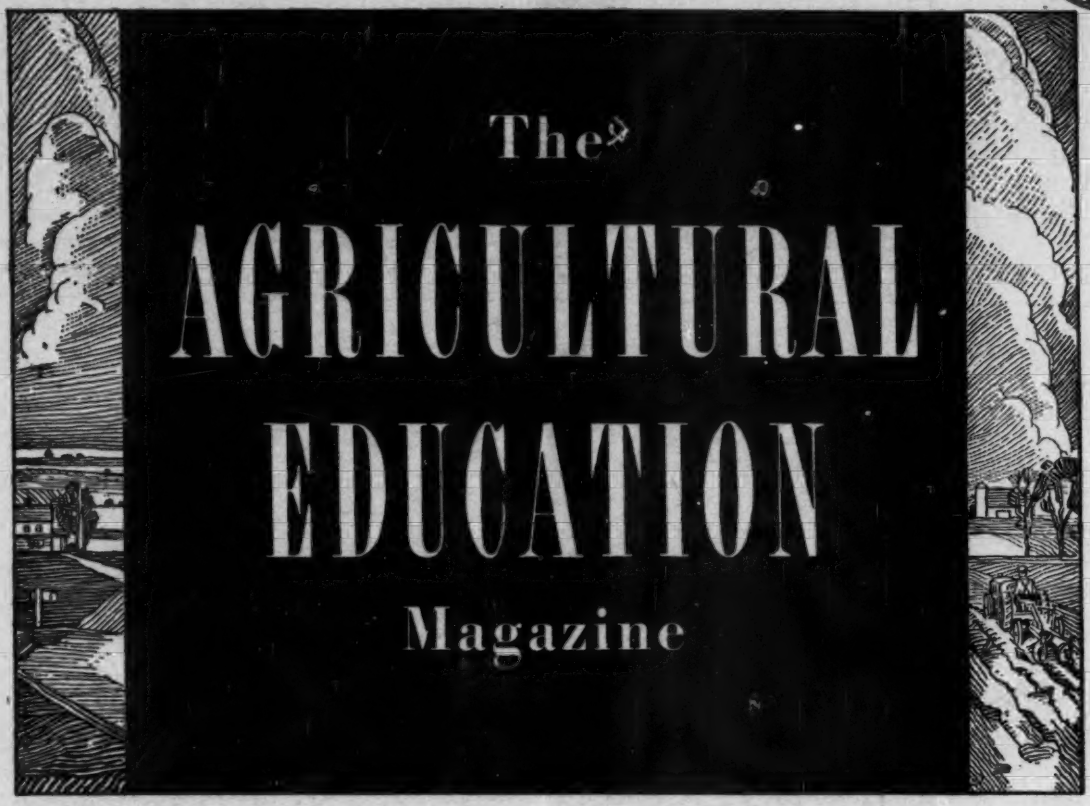


*TO EVERY organization which is doing a job that contributes to the well-being of our people, the soundness of our economy, and the effectiveness of our democracy, I can say, "The first and most important thing which you can do for defense is to go on with what you are doing—only do it better than ever before."*

*—Harriet Elliott, Member of National Defense Advisory Commission.*

# The Agricultural Education Magazine

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# Editorial Comment

## New Emphasis in Defense Training

THERE are unmistakable signs that education for national defense is taking on new meaning for those engaged in agricultural education. This new meaning involves a concept of the essential nature of agriculture in total defense.

When the challenge came eight months ago to teachers of agriculture and superintendents to organize and supervise classes for rural young men out of school the response was immediate, wholehearted, and eminently effective. Co-operation in the program has come from everyone altho it has meant in most cases additional work for persons already heavily loaded.

Altho it was thought at first that the classes provided would compete with regular part-time courses there are very few reports indicating serious competition. In many instances these courses served but to demonstrate to school boards and administrators, where demonstration was needed, how great the number of out-of-school young men on farms really is, and how earnestly they desire further education. The article in this issue by Dickerson bears this out. It will bear careful study by all teachers.

The courses taught admittedly provided general pre-employment training for industry, altho there were real values for farmers in them. The new emphasis is that agriculture, as well as industry, is essential to total defense. It is becoming increasingly clear to national leaders that an adequate, steady, continuing supply of farm products must be provided by agriculture. Farmers are called upon to produce, with less labor available, and are faced with the problem of operating their farms by making better use of their equipment, some of which may not be easily replaceable if production of non-defense machines is curtailed.

The exact role of agricultural education in this new emphasis is not entirely clear at this writing. But one thing is certain. When the call comes for agricultural education to function in the new role there is no question but that the tasks assigned will be done, and done in an efficient manner.

## For Professional Growth Try Something New

A STATE supervisor was recently heard to remark, "The third year is the crucial year for a teacher of agriculture. During this year he will either slip into a rut or he will find something new and challenging, and will continue to grow by virtue of the fact that he is attacking a new problem with the same vigor with which he started his first year of teaching." This supervisor ventured the opinion that most teachers made their greatest growth, professionally, during their first and second years. "Growth results," he said, "when a man does something different than he has been doing or does the same thing in a new or better way."

Successful teachers of long experience will probably concur in the notion that one of the best ways to keep from "going stale" is to try a new way of doing the things that have been done before, or to try something new. We have known of teachers who, having reached a "plateau" in their achievements, have had a "re-birth" as the result of teaching their first adult class or of reorganizing the courses for their all-day classes as a result of careful planning in a summer-school course. Some teachers have gained a new vision of the the possibilities of adult education thru organizing and supervising the teaching of a defense-training class.

Probably most of us, if we gave the matter serious thought before starting the school year each fall, could decide to try something new or to do something old in a new way. For hundreds of teachers of agriculture in this country a young-farmer class might do the trick. For others an adult-farmer class or a new co-operative project for the FFA chapter would provide the fertile soil for professional growth and development.

No ruts are made by a vehicle striking out in a new direction or straddling an old track. Neither will teachers get in a rut who are continually on the alert for new and stimulating challenges to be found in new projects or new ways of doing things. Why not try to recapture that do-or-die spirit of the first year of teaching? Why not try something new this year?

## Anthracite for Peaches

IF YOU are a teacher of agriculture in Maine, how would you like to spend a winter in Florida or California? Would the prospects of a year amid the wide, open spaces of Texas or Montana thrill you, if perchance your teaching experience has been in the industrial East or in the Corn Belt?

What I am suggesting is interstate exchanges for teachers of agriculture. Are we a narrow, provincial group of "rut-diggers," we teachers of agriculture? I venture to estimate that 95 percent of us are teaching in the state where we were educated. Surely more than half of us are working in communities in which we were reared. Unfortunately many have settled down to teach within the very shadow of their boyhood haunts. Is it any wonder that we become "rut-diggers," that our horizons are low and restricted? What opportunities have we had to see and know what goes on in agricultural education beyond state lines?

To be permitted to go to another state for a year and to teach amid different agricultural surroundings, to travel, to gather new ideas, and to catch the enthusiasm of other teachers of agriculture, of pupils, and of farmers is the proposition. This privilege should be extended only to teachers of successful experience. Certainly they should have at least five years of experience. It is understood that an exchange must be agreeable to both state supervisors and to the local school authorities. Each man's position must be held for him upon his return. Of course, he will want to return, and the community will and should look forward to his return. Only that type of teacher should be considered for an exchange.

Exchanges could not happen often in one's teaching career, perhaps not oftener than once. But wouldn't it be an incentive to plan and look forward to one? Perhaps no state program could afford to have more than five percent of its teachers away during any one year.

I know there are those who will say that our training and experience would not permit us to step in and take up the teaching of new and foreign agricultural enterprises. But we have studied all forms of agriculture. We are resourceful. Give us a chance to demonstrate what we can do.

As for me, I teach in the anthracite area of Pennsylvania, surrounded by ore pits—plenty of good farming, too—and rural folks and school administrators who will turn themselves inside out to co-operate in the local program of agricultural education. But I long to see Georgia, cotton fields, pecan groves, and peaches,—Georgia peaches! And if I should ever have a chance to be a teacher of agriculture there, I would resolve to be the best teacher of agriculture in the state of Georgia, at least for that one year while on exchange. Perhaps I would be glad to get back to my anthracite, but I would have lived in and known Georgia. I would have fulfilled a lifelong desire, and I am positive that I would have become a better teacher of vocational agriculture.—Byron K. Horner, Pennsylvania.

## Breaking From the Traditional

AS A profession grows older it is often true that certain traditional practices tend to become established. These are sometimes followed not because of their merits but because "it always has been done that way." Dr. Deyoe's article in the Methods Section calls attention to traditional practices in teaching livestock selection which are seriously open to question because of recent scientific findings. Apparently we tend to teach as we have been taught. The proposals set forth in the article will merit careful study by those who want to place their teaching on a more scientific basis.

A. K. GETMAN **Professional** R. W. GREGORY

# Rural Youth in the Farm Picture*

**O. E. Baker, Senior Social Scientist, Bureau of Agricultural Economics, United States Department of Agriculture**

O. E. Baker

THE crest of births in the United States was in 1921, when nearly 3,000,000 children were born, and in 1924, when births numbered about 2,900,000. These babies are now 19 and 16 years old. After 1924, births decreased 50,000 a year, on the average, until 1930, when the decline averaged over 100,000 a year until 1933. The trend since 1934 has been more or less horizontal. Births now number 2,200,000 to 2,300,000 a year, and a resumption of the downward trend may be expected.

### We Are at the Crest in Number of Youth Reaching Maturity

There is therefore at present, or was perhaps a year ago, a maximum number of youth of high-school age most of whom are seeking or soon will seek employment. Between 1940 and 1945 the number of youth of the age to graduate from high school will have declined about 150,000, or by about six percent.

Considering farm youth only, the crest of births, according to estimates of the Bureau of Agricultural Economics was also in 1921, when about 854,000 children were born on farms. The estimated annual number had declined about 140,000 by 1936, but had apparently increased about 40,000 between 1936 and 1939. On the farms of the nation the number of youth 18 years of age should decline from about 700,000 in 1940 to about 650,000 in 1945, or by about 50,000, provided annual net migration from farms remained constant at the 1930-40 level. The number of farm youth 21 years of age, however, may not change greatly in the five years, judging from the fact that births on farms in 1924-25 were about as numerous as in 1919-20. Nearly half of these farm youth are boys. In other words, about 25,000 fewer farm boys would reach 18 years of age each year in the mid-forties than at present, but the number reaching 21 years of age will not be greatly different for some years to come. However, judging from the ages of men in the former World War army, the conscription for defense training may withdraw each year about 64,000 farm boys 21 years of age and about 110,000 22 years of age, then a decreasing number of each age up to 35.

At present, it appears that about 360,000 farm boys are reaching 18 years of age each year, and that about 118,000 farmers are dying each year. How many are retiring or resorting to other occupations cannot be estimated with confidence, but it can be stated that during the decade before the depression, when about 350,000 farm boys were reaching 18 years of age each year, about 106,000 farmers were dying, and farms were decreasing 16,000 a year, the number of males between 10 and 30 years of age who left the farms in excess of those who arrived on farms was about 190,000 annually on the average. Apparently the number of farms vacated by retirement or resort of farmers to other occupations was about two-thirds as large as the number of farms vacated because of the death of occupants.

Looking forward to 1945, if we may assume a stationary number of farms and a predepression proportion of farmers retiring and resorting to other occupations, we might expect a situation somewhat as follows:

| | |
|---|---|
| Farm boys reaching 18 years of age in 1945 | 335,000 |
| Farmers dying in 1945, about | 120,000 |
| Farmers retiring, perhaps | 20,000 |
| Farmers resorting to other occupations, possibly | 60,000 |
| | 200,000 |
| Youth who might leave the the farm | 135,000 |
| | 335,000 |

This prognostication suggests that there may be enough farms available by 1945, when the youth 18 years of age now will be 23 years of age, to accommodate about 60 percent of the male farm youth as rapidly as they reach maturity, instead of about 50 percent as in 1920-30.

But all these estimates have little more than academic interest, for great changes are occuring in the agricultural situation, and the trends are very different in the several agricultural regions; for example, fewer farms in the Cornbelt as contrasted with more farms in the southern Appalachian Mountains.

### Youth in the Cornbelt as Indicated by Surveys in Indiana

In the spring and summer of 1940, surveys of rural youth and of openings in agriculture for them were made in five counties in Indiana, and in one county in Ohio. These were only small sample surveys, but I hope they will serve as examples of the combination of research in the extension work which seems to me to offer real promise of service. These surveys were made by the youth, with the help of the county agricultural agent, and for the youth to use in some of the meetings of the older youth groups this winter. Similar surveys are to be made in selected counties in certain other states.

Work was started in Blackford County, and after helping members of the Country Life Club to take records for a week, I came to realize that a great change in the attitudes of farm youth and in their situation had occured since my childhood in northwestern Ohio. Most of this change probably has taken place in the last 10 years. I had expected that only one-quarter of the farm youth would express a preference for farming. Instead, two-thirds expressed such a preference, the proportions increasing with the age of the youth. Of those 16 and 17 years old, only 45 percent wanted to farm; of those 18 years of age and still going to school, 55 percent. On the other hand, of the young men farming with their fathers in some sort of partnership, 94 percent preferred farming as an occupation. The reasons given for this preference were various, but about half of them included the word freedom somewhere in the answer. I recall another answer which was also typical. The young man who gave it said, "I worked six days a week in a factory, then four days, then two days, and farming is better than two days' work a week in a factory."

### The Trend Toward Father-and-Son Partnerships

Associated with this diminished economic opportunity in the cities is an increased opportunity in farming for some youth. Many fathers have been taking their sons into partnerships. This is nothing new, but the practice is evidently expanding rapidly. In the four townships of Blackford County, we found 43 youth who had been taken into partnership by their fathers during the last five years. It was estimated that there would be 74 such partnerships taking place during the next five years. In three townships of Monroe County in southern Indiana, outside the Cornbelt, eight partnerships were reported during the last five years; but it was estimated there would be 58 in the next five years. The number of openings for farm tenants is decreasing. In Blackford County during the last five years, 223 farms had become available for rent, and the number of changes in tenants was much greater. But looking to the next five years, only 166 farms seemed likely to become available for tenants, and I surmise that the actual number will be still smaller.

### The Agricultural Ladder Is Disappearing

The Cornbelt portion of Indiana is shifting rapidly from a largely commercial system of farming with much hired labor to a partly commercial, partly

familistic, system. The year-round hired man is almost gone. Only about 50 are left on the 1,100 farms of Blackford County—and tenancy is diminishing. The first rung on the agricultural ladder had practically disappeared, and the second rung is being broken. The so-called father-and-son partnerships that are increasing rapidly will lead on to inheritance, and the opportunity for a farm laborer's son or tenant's son to get a farm, or even remain in farming, is being rapidly diminished.

This decrease is occurring not only because of the increase in number of partnerships, but also because of decrease in number of desirable farms. A father-and-son partnership means in most cases a tractor, for the son wants to keep up with the Joneses; and in any case a tractor is a very useful machine. Then, in order to pay for the tractor and utilize the power available, another farm must be rented or purchased; it may be adjacent or it may be 10 miles away. Sometimes it is the farm of an aged farmer, who continues to live in the house, sometimes the small farm of a part-time farmer who can't afford to get the equipment to operate his 40-acre parcel of land; but more commonly it is a farm that has been operated by a tenant who is frequently pushed off the land.

### The Enlargement of Farms

The results of these rural-youth surveys in Indiana are only partly tabulated, so my picture must be fragmentary. For use in this paper, I hastily counted up the farms in one typical township of Blackford County, and found 161 farms owner-operated with no additional farm owned or rented. These averaged 81 acres in size. There were 55 similiar farms tenant-operated, and these averaged 86 acres in size. There were 25 farmers, often with son associated, who operated one additional tract of land, in most cases a former farm. These, usually two-man farms, averaged 165 acres in size. Eight tenants were also operating an additional tract of land, and these farms likewise averaged 165 acres in size. Finally, there were 15 farm owners and two tenants who operated two or more additional tracts of land, mostly former farms. These enlarged farms averaged 278 acres for those operated by part-owners, and 247 acres for those operated by the two tenants. From these figures one big farm of 2,100 acres is excluded. This farm included 20 or more former farms, nearly all purchased during the last 10 years, and is now operated by a farmer and three very capable sons, aided by three year-round hired men. The land is better farmed than before, but most of the buildings are deteriorating.

One-fifth of the farms in this township—those consiting of two or more separated tracts of land—include two-fifths of the land in the township. This larger and rapidly increasing kind of farm averages 233 acres in size, not an excessive amount for a father and son to operate jointly. It is primarily this expansion in the size of the farm, facilitated by the tractor and the use of capital that the father provides the son, which explains, in my opinion, why two-thirds of the young men 18 to 28 years of age in this county expressed a preference for farming. Some of them are getting a chance to do something worthwhile—marry and have a home, and live a respectable life—and more would like such a chance.

### Economic Status of Rural Youth

But only 32 out of the 183 rural youth 18 to 28 years of age were farming with father, and 16 more were farming for themselves—about one fourth in all. Seventeen were working at home for wages, and 36 were working for board, lodging, and spending money. Forty-four were working away from home, nine were in mixed employment, and 29 were in school. The average earnings of the young men farming for themselves was $790; of those farming with father, about $600, to which should be added perhaps $350 for board and room. The earnings of those working at home for wages was $200, of those working at home for board and spending money, mostly on small farms, only $151. Those working away from home received $674, and lived mostly on small farms. Nearly half of these youth working away from home were working on other farms. The annual average earnings of the young women was much less—$75 for homemakers, $80 for those working in parents' home, and $460 for those working away from home. The average investment made so far by the youth farming for themselves was $1,610, and by those farming with father was $748.

### Some Social Characteristics of the Youth

One of the most significant facts revealed by the survey in Blackford County was the rapid decrease in number of rural youth—from 36 boys and 24 girls 18 years of age to seven boys and two girls 28 years of age. Apparently, fully three-fourths of the youth of these ages have left the farms. But relatively few have gone outside the county; 282 of the 406 boys who graduated from the eighth grade of the rural school between 1927 and 1936 inclusive, or 70 percent, are still living in Blackford County. More than 40 percent of these boys are engaged in farm work. Only 93 boys of the 406 graduated were living in other counties of Indiana, and only 21 were living outside the state. Among the 379 girl graduates of the eighth grade, 270 were still living in Blackford County. However, only 115 of them were homemakers or doing housework on the farms More had married non-farming husbands than farming husbands. There has evidently been a heavy migration from the farms to Hartford City and and Montpelier, the two towns in the county. Moreover, more than half the rural youth 18 to 28 years of age were working part-time or full-time away from home.

Practically all the rural youth in Blackford County have attended high school. Over three-fourths of the young men and four-fifths of the young women are high-school graduates. But only four percent of the men and five percent of the women have attended college. Many have gone to college, but few have returned to the farms. Over one-third of the young men have taken vocational agriculture courses, and nearly half the young women have had courses in home economics. With the extension of facilities these proportions will doubtless increase. Fifty-five percent of the young men, and 61 percent of the young women have been 4-H Club members, and the proportions are much higher for the youth still in school. Fifty-five percent of the young men and 76 percent of the young women are church members. The church is the one outstanding social institution in these Indiana counties, other than the governmental agencies. Very few rural youth are members of a lodge or of other social organizations in the community.

The most important recreations of the young men are movies, hunting, basketball, and motoring; and of the young women, movies, reading, and needlework. Dancing ranked sixth in importance among the young women, with seven dances a year, and thirteenth in importance among the young men, with two dances a year. If these returns are reliable, it suggests that city youth were getting more than their share of the "dates."

Attendance at movies, by contrast, averaged 39 times a year for the young women, and 36 times for the young men, involving an appreciable item of expenditure, especially for the young men. Some of the young men, more frequently those working at home for board, lodging, and spending money, spent $50 a year for recreation, excluding automobile costs. In more than half the homes of the rural youth there was a piano, in more than three-fourths electricity, and practically all had autos and radios. But less than a third had running water in the house, less than a fourth had a bathroom, and only one in eight had a furnace.

### Part-Time Farmers and Commuters

Part-time farming and commuting is another interesting development arising out of the extension of these conveniences to rural homes, the mechanization of transportation and agriculture, and urban unemployment. When a farmer takes his son into partnership because the son cannot find a satisfactory job in town, and they field-rent a tenant farm, the house generally becomes vacant. On the other hand, hundreds of family heads in nearby cities, working perhaps only two or three days a week in some factory or store, are looking for cheap rent. Moreover, they are instinctively seeking economic security, and a little land with opportunity to have a garden, some chickens, and a cow. These afford some protection, perhaps mainly psychological, against starvation. Most of these part-time city workers already have an automobile. So these vacant houses on former tenant farms are quickly gobbled up—two miles or ten miles from town seems to make little difference. In La Porte County we found many people living on little tracts of land, some that might qualify as farms, commuting 50 miles daily to Chicago. The supply of such low-rent houses is not equal to the demand. Old schoolhouses have been fixed over to rent, and barns have been renovated; one day we even saw a chicken house being remodeled to rent to a family from the city.

Then there are many city people who have managed to save a little money who look longingly toward the land as a haven of rest in old age, or a haven of shelter from the economic storms they see rising on the horizon. One day we

found on five miles of road four school teachers who had bought 40-acre tracts. Just beyond we took a record from a youth who had been working with his father on an 80-acre truck farm, 40 acres of which had now been sold by the owner to the school teacher. In reply to the question as to what occupation he would prefer to follow, he said, "I would prefer to farm, but we can't find any land to rent within 10 miles, and I I fear I will have to give up farming and go to town." The children of many tenant farmers are facing a hard future.

### The Future Farming Picture

Urban and rural are intermingling into a common culture in at least this portion of the Cornbelt, but social stratification is developing. As I envision the future, the picture is somewhat as follows: Long rows of rather small houses along the roads occupied mostly by low-income families working in the towns and cities, who have a few flowers and who are trying to improve their food supply by having a garden, some chickens, and a cow. At many crossroads will be located two or three gasoline stations and, if near a city, a soft-drink, beer, or liquor-selling establishment, supplied with noisy music boxes and gambling machines. Back from the roads, commonly in a grove of trees, will be the homes of the real farmers, probably only half or a third as many in number as at present, but with farms twice or thrice as large. There will be only two or three children per family, as in France for a century past, and land ownership will descend from father to son or son-in-law, as it does in most parts of the world today. The apparent decline in the birth rate between the father's generation and the son's generation indicated by the Blackford County survey is startling. There may be even less than two children in such famlies in the future, and land ownership may tend to concentrate thru marriage and inheritance. As a compromise between the rural democracy of the past and the perplexities of the future, the loan systems of the Farm Security Administration may appear as the desirable middle way.

### The Corn and Winter-Wheat Belt

Let us now pass from one of the rich land regions to one of the poor-to-fair land regions. We have made no youth surverys as yet in the southern Appalachian Mountains—I hope we may before long—but the census figures and local surveys agree in revealing a rapid increase in the population during the economic depression, as maturing youth have been backed up on farms, and older children, who had gone to the cities, have returned seeking shelter and sustenance. Farms have been divided, steep hillsides have been cleared and planted to corn, cheap shacks have been erected in which to live, and the relief load in some counties has increased until it includes nearly half of all families. Here is a very different picture from that in the Cornbelt. I hope we can soon make some surveys also in the Cottonbelt, for that region presents still another picture.

Altho we cannot outline the picture in these and other areas, it might be helpful to give a few figures from the youth surveys in southern Indiana, which is fairly typical of the corn and winter-wheat region.

The tabulations relating to the youth themselves have not yet been made for these southern Indiana counties, but in preparing this paper, I hastily counted up farming opportunities reported by the Agricultural Adjustment Administration committeemen in three townships of Monroe County. During the last five years, 44 farms have been rented in these three townships by tenants, which is less than the number in one average township in northern Indiana; 14 farms have been sold, as compared with 10 times an many in the four townships of Blackford County; and 35 farm laborers have obtained jobs, which is about the same per township as in northern Indiana. Looking to the next five years, only 13 tenants, it is estimated, will find farms, as compared with 44 in the last five years. But 58 sons, it is thought, will be taken into partnership with their fathers, as compared with eight during the last five years. It is estimated that 32 farms will be sold—half because of old age—as compared with 14 during the last five years. In one township in Orange County, Dr. Nat Frame found out of 170 farmers, 39 (nearly one-fourth) who are likely to relinquish their farms during the next five years because of old age. In brief, in these counties characterized by less fertile soil and less commercial agriculture than those in northern Indiana, the agriculture is more stable, with far fewer openings for tenants and for youth, except by means of partnerships and thru death of aged farmers.

In the poorer parts of these counties there are hundreds of houses on what was formerly farm land but which is now eroded and grown up to weeds and brush. Here are extensive rural slums, with a large proportion of the families on W.P.A. There are many young children, but apparently few older youth, and none of these youth are members of the county older-youth club. The correlation between fairly good farms and club membership is close.

Consequently, it has proved very difficult to make adequate youth surveys in the poorer parts of these counties. There is no organization, and there are scarcely any individuals with whom to work. In some sections, such as Penitentiary Hollow in Monroe County, the survey had to be abandoned. Here almost within the shadow of the new, magnificent buildings of Indiana University, there is abject poverty and ignorance. But, occasionally, in these whirlpools and eddies on the edge of the current of civilization, will be found a family possessing unusual originality and culture. The youth living in these poor-land areas need such help as the 4-H and older-youth clubs can give, but it is much more difficult to help them. *The effort must be made, however, not only because of individual need, but also because it is such areas that are providing in increasing proportions the future citizens of the nation.*

### In Conclusion

In conclusion may I note some of the uses which it is hoped will be made of these youth-survey materials. The survey of what is called in the census reports the "composition and characteristics" of the youth is made by the youth and for the youth. I believe the educational experience of taking these records is of fully as great value as the statistics obtained. These statistics are local and have concrete associations in the minds of the youth who have taken the records. These statistics should stimulate discussion when they are made available to the youth for use in some of their meetings.

We found, moreover, that the parents become interested. Several fathers of youth who had taken records came voluntarily to the round-up meetings to find out more about the survey.

Using the township and county committeemen of the Agricultural Adjustment Administration and a few other well-informed farmers to obtain estimates of past and future changes on all farms in the county, tends to arouse their interest. Hereafter, we hope to have some of the leading youth conduct these interviews with the committeemen. We shall try out doing this phase of the survey first rather than last, in order to stimulate interest on the part of a number of youth; and also to obtain a map showing the location of all rural youth in the county, more complete and up-to-date than that provided by the public school records. These maps are of great help in the enumeration.

*An address delivered November 12, 1940, at the fifty-fourth annual convention of the Association of Land-Grant Colleges and Universities, Chicago, Ill.

# Book Reviews

*Soils and Soil Management*, A. F. Gustafson, 424 pp., illustrated, 1941, McGraw Hill Book Company, New York, list price $3.00. The nineteen chapters in this book treat the farmer's problem of soil management from the standpoint of conserving the soil in order to produce crops economically. The book treats well the causes of soil erosion and its economic control. Much emphasis is given to the application of the fundamental principles of soil management to field conditions. The book is profusely and well illustrated with appropriate pictures and tables pertinent to the content. Each chapter is followed by a set of questions helpful to the student in making application of the principles stated.—R. A. Olney.

*Time on Their Hands; A Report on Leisure, Recreation, and Young People*, 267 p.p., illustrated, 1941, American Council on Education, 744 Jackson Place, Washington, D. C., $2.00. This book examines the needs of youth "in the light of the new meaning of recreation which has grown out of such important social changes as technological developments, the growth of commercial recreation, the accessibility of urban amusements to village and rural youth, and the prolonged economic dependency of young people."

The authors, in their report which is a study of the American Youth Commission, point out that "the most important fact about public recreation programs is that there are so few of them." Federal subsidy to states for recreation programs is recommended. This book should be of value to teachers concerned with the welfare of out-of-school rural youth.—H.M.B.

# A Rebuttal[1]

H. M. HAMLIN, Teacher Education, Urbana, Illinois

H. M. Hamlin

EVALUATION is a basic process in education. If one is wrong about evaluation, he is wrong about everything else in education. When we deal with evaluation, we are playing with educational dynamite.

We have had evaluation as long as we have had agricultural education. The system of evaluation, if we may call it such, which we have has worked pretty well. Under it agricultural education has flourished and grown strong. The burden of proof is upon the Committee on Standards to show that its plan of evaluation will supplement advantageously the methods of evaluation in use. Dr. Fife indicates that the Committee has no desire to do away with the present methods.

Thus far, we have been left in the dark at this point. Dr. Fife seems to assume that the Commitee's procedure has no relationship to existing procedures. It seems to me inevitable that the two systems of evaluation must supplement each other or conflict with each other. If they are to be supplementary, the relationships between them must be carefully worked out.

### Use of Study in Doubt

The profession is also in the dark as to the reasons for making the Committee's study, and as to what is to be done with the standards, once they are constructed. I have known of no general demand from the profession for national standards. Who put the Committee to work and why, and who is going to use the standards? Will they be used discreetly by persons who understand their limitations? Or will persons outside the profession insist that these standards are our own and that we are bound to accept any conclusions about our work which are based upon them?

It is well to remember that standards and standardizing agencies have been considerably less than an unmixed blessing in the field of education. Very severe criticisms have been justly directed against them. There has recently been a marked tendency to overhaul them. Incidentally, the plan of evaluation of the Committee on Secondary-School standards, on which our own Committee on Standards has based its plan, is not considered in our parts as offering a working solution to the problems on which the standardizing agencies have been working.

We are all interested in improving agricultural education, that is, in "higher standards." There is no assurance, however, that national standards are higher standards. They may have either a leveling or an up-grading effect.

### Local People Are the Real Evaluators

The people in our local communities have been and will, we hope, continue to be the real evaluators of agricultural education; they set the standards. They need help; they do not welcome rivals in evaluation.

They recognize that those who really evaluate the school are the ones who really control it, and that those who really control the school are the ones who really evaluate it. If national, professional evaluation is substituted for local, lay evaluation, national and professional control is substituted for local and lay control. Our Committee on Standards probably does not want to move in this direction, but it is following the same road as those who do.

While local, lay evaluation could be much improved, there is much to be said for it. It is largely concerned with outcomes, rather than ways and means. It is relatively thoro, since it is based upon observations made, day in and day out, by many persons. It is adapted to local conditions and needs and is related to the philosophies and values of the local people. It may use the educational profession and whatever devices the profession has evolved in evaluation.

Communities thru misuse of their evaluation function may lose the right of evaluating their schools. In some cases they have already largely lost it. With its loss goes one of the primary prerogatives of democracy and a setback to the whole cause of democracy. Our profession should help the people to retain this right and to exercise it intelligently.

### How Important Are Ways and Means?

The paramount question, then is: "Who is to do the evaluating?" Almost as important is the issue as to whether *outcomes* or *ways and means* are to be mainly considered. There is, of course, a relationship between ends and means, as Dr. Fife points out. We must all, however, recognize the truth of the following comment by Dr. Ralph W. Tyler:

"The ultimate evaluation of the school program and of any phase of this program is obtained by methods which appraise the product, that is, the student. In spite of this principle, we have frequently based much of our evaluation on methods of appraisal which check the process and procedures of the school rather than the outcomes or results. Thus a school may be appraised by using a check list of approved school practices. The school is rated 'good' if it follows many of these practices, such as employing a guidance officer, maintaining a large and well-rounded book collection, following a single-salary schedule, etc. Of course, this appraisal of processes rather than outcomes of education is helpful when used from time to time only as a tentative and preliminary technique. . . . This means that even when check lists and rating scales of desirable practices are used for the tentative guidance of the school, they should be supplemented periodically by a careful appraisal of the product, that is, by a comprehensive evaluation of the development of students to be sure that the educational objectives of the school are actually being realized."[2]

While there are other limitations of the plan of determining national standards now under way, which were pointed out in my original statement, the two discussed above seem to me to be primary while the rest are derivative.

I am, of course, not alone in questioning standardizing procedures of the type the Committee is using. I have plenty of company, much of it very good company, as everyone who has read the literature on evaluation knows.

### Evaluation Closely Tied Up With Objectives

I am glad that Dr. Fife accepts most of my article; I am distressed that he does not see the consistency between the rest of the article and my comments on evaluation. He, too, has much company. Many do not yet see that a list of "objectives" formulated by a national committee is not a real list of educational objectives at all, but only a suggestive list, and that the real objectives are those of the persons who are being educated. And it was only two years ago, at the St. Louis meeting of the American Vocational Association, that the Agricultural Section devoted the first half-day to objectives and the last half-day to evaluation without anyone's discovering until late in the second session that there was any relationship between the two.

I should like to correct one impression. I have *not* "from the early days of the work of the Committee insisted" that my plan of evaluation be adopted by the committee. Dr. Fife says later on in his article that I have not "set up a tangible plan for evaluation." How then could I have insisted upon their adopting my plan? The fact is that my first comments to members of the Committee were made in the Spring of 1939 when the new evaluation plan, fully worked out, was presented at the Central Regional Conference at Chicago. Even then I voiced only mild objections and asserted that I should be glad to see the study completed. My correspondence with Dr. Fife began at his request after we had tried the plan in Illinois in June, 1940. I did not express myself except to a few close associates until my Indianapolis talk in October, 1940. This talk was purposely withheld from publication until May, 1941, to allow the Committee to finish securing its data without having obstacles placed in its path.

### Final Answer Not Yet Found

Dr. Fife indicates that we are getting under way in Illinois a program for improving the methods of local, lay evaluation now in use. It is planned that the study will run for five years, beginning about July 1, 1941. This will indicate that my attitude is not wholly destructive. One does not have to await the outcome of this study, however, to point out the limitations of the Committee's approach.

I am satisfied that the Committee does not believe that it has said the last word on evaluation. I do not profess to know what it is. My purposes will have been served if this debate with Dr. Fife helps in arousing the profession to stop, look, and listen before rushing into any particular arrangement for evaluation and standardization. I hope it will in no

(Continued on page 38)

A. M. FIELD

# Methods

## If Not Judging, What Then?

GEORGE P. DEYOE, Teacher Education, East Lansing, Michigan

G. P. Deyoe

IN TEACHING, as in most other occupations and in human activities in general, there is a tendency to cling to traditional ideas and conventional practices long after their fallacies have been exposed. In even so young a field as vocational agriculture we do not have to search long to find some of these inconsistencies. The instructional practices which deal with the selection of farm animals constitute one glaring example which merits our serious consideration.

On several occasions, the writer has made bold to question the continued and almost exclusive emphasis which is placed on outward appearance as a basis for selection of farm animals.[1] This overemphasis on judging is being continued in the face of scientific investigations which have shown that it is but a crude approach to determining the values of greatest worth in livestock. *One of the greatest challenges to livestock producers is that of acquiring the necessary abilities for selecting and improving livestock by procedures which are in keeping with recent scientific developments.* As a corollary, one of the important challenges to teachers of vocational agriculture and others interested in agricultural education is that of devising ways and means for developing these abilities in the livestock breeders of today and tomorrow.

### Some Are Aware of Fallacious Practices

Thru correspondence and personal contacts, the writer has received a number of interesting comments relative to the position he has taken in published materials and elsewhere. A teacher-educator in a Midwestern state said, "A few people are aware of the situation but do very little about it." A teacher of vocational agriculture in Texas stated, "I am fully in accord with the ideas expressed in your article and hope that it is so unorthodox as to jar some of our fellow workers to their senses."

From a number of states, teachers and others in vocational agriculture have expressed themselves as being in sympathy with the viewpoint taken in these articles, namely: that less emphasis should be given to conventional judging and more emphasis should be placed on the newer developments in animal selection and breeding. One teacher-educator stated, "I wish that we could do more to revise the contests for our agricultural students. The things teachers teach seem to be determined as much by the measures of achievement which we use as they do by their own best judgment as to teaching procedures." An editor of a livestock journal commented as follows, "I can subscribe 100 percent to all that you have said and I want you to know that we are anxious to support and promote the program which you have outlined. . . . Our summer and fall issues will emphasize the need for better understanding of (market) grades and less emphasis on hair-splitting decisions by judges who think they can look at an animal and tell what the carcass will grade when hung in the cooler."

### Others Rationalize By Claiming Disciplinary Values

From various sources the viewpoint has been expressed that changes are needed, but there appears to be considerable doubt as to how to proceed. Partly because of this, and partly because of other reasons for not desiring a change, we find some persons who still argue (some of them vociferously) for a continued emphasis on judging. A few maintain that such training has disciplinary and transfer value and therefore aids in the development of the generalized ability to judge wisely in various situations in life. This latter argument smacks a bit too much of that put forth in *The Sabre-Tooth Curriculum* where a "peculiar" tribe of people had schools which persisted in teaching youngsters how to combat the sabre-tooth tiger long after that beast had become extinct, on the grounds that such instruction trained the mind and had cultural value![2]

### Shortcomings of the Judging Approach to Livestock Selection

In articles to which reference has been made, as well as in many other sources, much evidence is available which shows the fallacy of attempting to determine the performance and transmitting ability of animals from outward appearance or from pedigree. Such evidence, if rightly interpreted, seems to lead inexorably to such conclusions as the following:

1. Outward appearances (phenotype) do not provide an accurate index for determining the productivity or performance of an animal, be it in terms of milk, eggs, wool, work, meat, or speed.

2. Neither the appearance, productivity (performance), nor pedigree of an animal is an accurate index of its genetic makeup (genotype); and therefore these are of little value in the determination of transmitting ability (prepotency). One of the oldest fallacies of heredity, and perhaps the most difficult to eradicate, is the belief that "like produces like"!

3. A continued emphasis on appearance and pedigree is likely to lead to disappointment for those breeders who seek to produce animals of merit in the characteristics of greatest value.

4. Progeny testing is a valuable tool to the breeder who seeks to develop a constructive program of livestock improvement.

### Supporting Evidence

A few examples, of the many available, should suffice for supporting the preceding statements.

At the Maine Experiment Station, eight years of selecting hens by appearances failed to increase the level of production in a flock in which males of high-producing ancestry were used. Thru progeny selection, however, in which males and females were selected on the basis of the egg production of their daughters, the production in this flock was nearly doubled in two years.

In the case of dairy cattle, the production of the average cow in the United States has remained at a low level (about 180 lbs. of butterfat) largely because of the failure to apply techniques of greatest value relative to selection, breeding, and feeding. By using records as a basis for culling cows at the lower levels of production (together with improved feeding) the average for herds in dairy-herd improvement associations has been raised to slightly above the 300 mark. However, in maintaining this average, there continues to be considerable wasted effort due to the necessity of culling a sizable percentage of animals which prove to be unprofitable after they come into production. The breeders who make greatest progress are the ones who are willing to take the next step, namely, the selection of bulls and cows on the basis of their ability to transmit satisfactory production.

At Michigan State College, from a study of the performances of ewes on the basis of gross income, weight and grade of fleece, weight and quality of offspring, etc., wide differences were found even between ewes which were similiar in type.[3]

Recent tests by the Bureau of Animal Industry emphasize the differences in the breeding value of animals which outwardly are much alike. For example, pigs from a purebred boar averaged 11 percent greater gain and ate 36 pounds less feed per 100 pounds of gain than pigs from another boar of the same breed and similar in appearance. Many slaughter tests at various experiment stations and packing houses show that appearance of meat animals on the hoof is an inaccurate guide to cut-out values. Investigations involving the transmitting ability of beef sires similar in appearance have shown marked differences in the economy of gains and other characteristics of their offspring.[4]

These illustrations and many others which might be given indicate some of the fallacies present in the conventional approach to livestock selection. Such illustrations show in a convincing manner that the appearance of an animal is likely to prove deceptive if compared with actual tests of performance and prepotency.[5]

### Evidences of Progress in Vocational Agriculture

While it is disturbing to find that a continued emphasis on judging by appearance is not providing the desired results in livestock improvement, it would be unfair to imply that no changes for the better have been made in the instruction in vocational agriculture and elsewhere. Altho no effort has been made to canvass the entire field, several promising examples have come to the attention of the writer. It is thru refinements and additions to such pioneering efforts as these that progress is most likely to come.

In many departments of vocational agriculture scattered thruout the United States, portions of the boys enrolled are conducting improvement projects in dairying on their home farms. As an integral part of this activity, records of production are kept for each cow in the herd. While it is to be admitted that some of these records have not been as carefully and consistently kept as is desirable, many boys have kept the records conscientiously and accurately and have used them in determining the cows which should be eliminated because of unsatisfactory production. In some cases, apparently altogether too few as yet, the use of the records has been extended to progeny testing in connection with proving sires and brood cows. The department at Oshkosh, Wisconsin, is one of several which have done outstanding work along this line.[6]

In California, on a state-wide basis, records of feed consumption and rates of gain have been kept for market hogs which are raised by students of vocational agriculture in their programs of supervised farm practice. Wide differences have been noted in the traits mentioned, and such information is of value in selecting litter mates for breeding stock. This undertaking on a fairly comprehensive basis is apparently effective for directing attention to the use of improved techniques in the selection and improvement of swine.[7]

At Iowa Falls, Iowa, the Junior Duroc Breeders' Association, as developed by the local chapter of Future Farmers of America, is encouraging its members to weigh the litters at 56 days of age as a check on the performance of the sows. This information is of value in determining what sows are to be retained as breeding stock, and on a long-time basis may provide information of value in determining prepotency. Catalogs for the annual sales include this and other information of value to the prospective buyers in supplementing considerations based on outward appearances

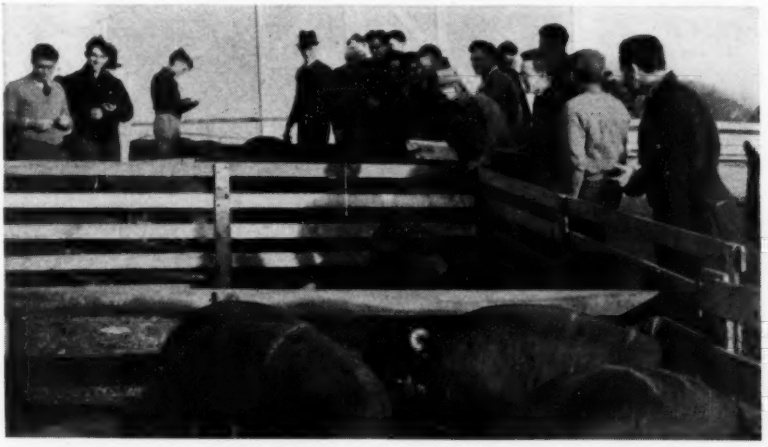
### New Types of Shows

At Austin, Minnesota, as an outgrowth of adult-farmer classes sponsored by the department of vocational agriculture, a swine-improvement association has been organized. As a part of the program of swine improvement, litter weights are taken at 56 days of age, as this has proved to be a good index to rate of growth and economy of gains. These performance records of the brood sows are used as a basis for selection and breeding practices. From year to year, increases in average litter weights have been brought about by many of the farmers engaged in this program. At a recent fair in that county, barrows were placed on the basis of individual rate of gain, total litter weight at 56 days, and meat yield of the carcass after slaughter. Thus, the customary judging on foot was entirely displaced. The winning barrow in 1940 came from a litter of 10 pigs which weighed a total of 507 pounds at 56 days of age.[8]

In several states, including California, Illinois, Michigan, Missouri, and North Dakota, marketing shows are sponsored for students of vocational agriculture.[9] In these shows, animals are grouped into market grades rather than "judged" in the conventional manner. In some cases, the animals are followed thru the packing house to determine carcass grades, cut-out values, and dressing percentages, altho as yet the selling price is based on grades on the hoof. While an emphasis in these shows on grading on the hoof represents a step in advance over the "sporting aspects" of the usual fat-stock show, there is still much to be desired in improvements in livestock marketing. Perhaps some of these marketing shows will lead the way to further improvement.

In at least one state, Wisconsin, the judging of dairy cattle in the annual state contests has been modified by including considerations in addition to type. However, for the most part the livestock contests in the various states have been continued along traditional lines. To some extent, this is probably due to the pattern set in national contests. At any rate, their continuance without modification, together with the premium on winning, is without doubt contributing to the instructional overemphasis on outward appearance as a basis for selection of livestock. Two encouraging developments in these annual contests should be mentioned, however. Some states are adding activites such as farm management and demonstration contests in which the educational values are fairly evident, and some states are using various means to de-emphasize the glory frequently accorded to the team which happen to land at the top of the heap. (One such method used in some states is to rate the teams by groups such as excellent, superior, etc.).

With high-school and college students, the writer has had some experiences in instruction in livestock selection which represent deviation from the conventional approaches. These include the use of appropriate records of performance as a basis for selection in the case of swine, sheep, and dairy cows. Group activities have been planned and used in which consideration for outward appearance was supplemented by this information relative to performance. For example, instead of sticking solely to considerations of type in instruction in dairy-cattle selection, classes of animals were provided for which information was made available relative to reproductive efficiency, past production (usually for more than one year), and production of offspring. Ewes for retention in breeding flocks and replacements therein were selected on the basis of wool production and quality, reproductive efficiency, and weight of lambs produced, in addition to the general type of ewes and their offspring. Brood sows and replacement stock were selected on the basis of litter weight at 56 days, number farrowed and number raised in litter, and uniformity of type in the litter. (See accompanying photograph.) Thus, class exercises in livestock selection were developed on a realistic basis which took into account desirable factors in addition to appearance. The writer also aided in conducting one of the first contests in judging dairy cattle in which placings were based on production in addition to type.[10]



These students are selecting replacements for a swine breeding herd. In addition to type of individual animals, consideration is being given to such factors as number farrowed in litter, number raised in litter, litter weight at 56 days, and uniformity within the litter. (Note: The pigs in each pen are litter mates. Only parts of some litters show in the photo.)

### What Are the Next Steps?

In any program of reconstruction, we need constructive suggestions. "If not judging, what then?" This question and similar ones are being asked by many persons who are dubious about the value of selecting by appearances but are reluctant to de-emphasize it until better methods are devised. Let it be said at the outset that the writer does not claim to have all the answers. Such pioneering attempts as have been described and others to come are likely to be the source of many improvements in the future.

The following questions and suggestions are provided in the hope that they will stimulate further thought and action relative to improvements which should be made:

1. Are we developing ideals and stand-

(Continued on page 38)

J. B. McCLELLAND **Farmer Classes** O. C. ADERHOLD

# Utilizing Home and Community Resources in Adult Classes

B. L. BIBLE, Teacher, Bruceton Mills, West Virginia

B. L. Bible

FOUR years ago I came to the agricultural department with which I am now connected. Evening schools had been established at two centers in the school area, altho one center did not prove very successful. Shortly after assuming duties at this school I was called to the home of a first-year student of vocational agriculture to cull the laying flock. That contact with the boy's family led the way to the establishment of an evening school which has developed continually for the past four years.

The farmers who became members of that evening school were not very favorable to the program of vocational agriculture in the high school. We met weekly for 12 weeks the first year and discussed problems concerning pasture improvement and hog production.

At the last meeting each member was presented with a mimeographed booklet. These booklets contained a summary of the discussions held at each meeting, as well as other useful information concerning the enterprises. The material was arranged in an attractive manner by the use of illustrations depicting certain farm practices or problems, with a description of each. One page of the publication was contributed by the FFA chapter. Much interest was manifested in this summarization of the work, and the members asked to have the school continued for another year.

The members of another evening school taught that year were very progressive in their educational ideals. They formed an organization known as "The North Preston Farmers' Club." This club has held monthly meetings thru the year to discuss members' problems. These men are quite willing to adopt improved farm practices appropriate to their farms. One of the men has been conducting experimental tests with 20 or more potato varieties in connection with the West Virginia University College of Agriculture. In 1939 this member was awarded the title of "potato champion" of the county for the production and quality of potatoes he grew. One of his prize accomplishments was the construction of a home-made potato spraying outfit.

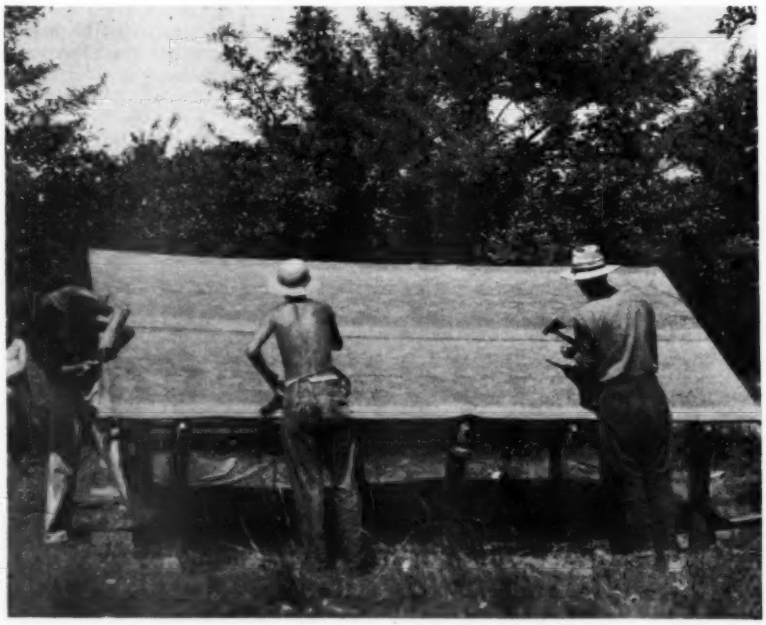
### Factors Contributing to Success

As the evening classes have been held from year to year, many services have been performed for the members. All-day students have pruned apple trees and grape vines for various farmers, tested milk for butter-fat content, tested soil for lime requirement, and culled the home poultry flock. The local Future Farmer chapter elected three farmers to honorary membership in the organization. Baby chicks were purchased thru the chapter co-operatively, with a saving of one dollar per hundred chicks purchased. The farmers bought various kinds of feed thru the boys' organization at a substantial saving.

For several years the chapter has purchased certified seed potatoes and sold the seed at cost to those farmers who wanted it. Two or three of the evening-class members have been guests each year at the annual father-and-son banquet sponsored by the local chapter. One group of boys wired a poultry house for electric current with time-switch installed. Another group of FFA boys built a range shelter for a farmer.

The evening-class members, thru group action, have been able to secure the benefits of electricity for their communities. Many of the farmers are using artificial lights for the poultry flock. Several of the farmers are co-operating with the TVA in a superphosphate demonstration-experiment on pasture land.

Evening-school member spraying potatoes with home-made sprayer



FFA members build range shelter for adult-class member

Numerous other improved farm practices could be mentioned, but it is not the purpose of this article to list them.

Proper publicity has proved important in obtaining interest and participation in the work. Various news items of the evening-class instruction were printed in the county paper, and the work of some of the members was discussed. The *FFA Reporter*, an annual publication, carried a summary of the adult education program. The attendance record and names of the members were printed on the first page of the evening-school booklet. The teachers of the one-room rural schools where the classes were held attended the meetings because their major interests were related to agriculture. Their pupils kept the parents informed regarding the time of the meetings. The parent-teacher association and the evening classes were generally organized on the same evening and the two groups co-operated.

### Use of Visual Aids

Visual aids have an important place in adult education. The 35 mm. filmstrip projector is a valuable teaching device. The greatest problem at present is to select the proper pictures suitable for the particular job. Many of the filmstrip subjects are too general and indefinite. Oftentimes much better pictures can be made of local subjects but the cost and time are limiting factors. The activities of evening-school members can be photographed in color on Kodachrome film produced on a 2″ x 2″ slide for projection. This procedure has given excellent results in my situation. It is hoped that soon a useful film library of local subjects can be collected.

At selected intervals during the evening-school instruction I have used educational motion pictures, silent and sound, and they have some merit as a teaching device as well as in creating interest in the work. Charts, maps, and posters are useful visual materials, and they are especially valuable for adults who will accept the facts much more readily when they are presented in an attractive form which can easily be seen.

### The Value of a Practical Program

The program of adult education must be practical in nature to achieve results. It must be truly vocational in every respect to be worthwhile. It involves give and take in the discussions in which the teacher often learns as much or more than the members. Thru the conference procedure in teaching it is possible to have the farmers relate the practical experiences they have had which pertain to the problem discussed. Considerable tact and good common sense are prerequisites in working with any adult-education program.

Regular follow-up visits to the members are necessary to make the program function from year to year. The farmers who become members of the classes in adult education expect the teacher to come to their farms and discuss their problems with them. Much time is required, and a considerable amount of work is necessary for evening-class instruction, but it is worth the effort because it also assists farmers to some extent in the art of living. By doing this we are working toward the supreme goal in life—to make living worth while.

# Evening Schools Result in Adoption of One-Variety Cotton Growing Program

G. A. Luno, Teacher, Plain Dealing, Louisiana

THE loss of foreign exports and the demand for quality cotton staple by the cotton mills in the United States are factors outside of the control of Southern farmers, and have forced a great hardship on every cotton grower in communities thruout the South. The price of lint cotton depends on length of staple, color, amount of foreign material, and on whether or not the fibers are gin-cut.

Realizing that the amount of cash which farmers receive annually for the cotton produce depends on these four factors, the writer made a survey of the conditions existing in Plain Dealing, Louisiana, to discover how it might be possible for cotton growers to realize greater return for their major crop enterprise.

Plain Dealing Community is composed of about 700 cotton growers located in seven community centers of the school patronage area. These farmers produce around 4,200 bales of cotton annually.

### Preliminary Investigations

It was found that the gins in use in the community were of the latest type, and the ginners had a working knowledge as to the rate of speed that the gin saws should be run for long- and short-staple cotton in order to prevent napping or fiber cutting by the saws. It was decided that no improvments could be made on this factor.

The next step was to determine the condition of the cotton in regard to color and amount of foreign matter present when it reached the buyers. It was found that the farmers were being penalized by the cotton buyers because there was too much trash in the cotton, and that the usual run of cotton could be improved in color and cleanliness. The writer was informed that a better price per pound could be realized from the same product if it were harvested under proper conditions and with greater care and precautions.

After talking with the local cotton classes and the farmers, it was found that the length of staple of cotton produced ranged from ⅞ inches to one inch, the greater portion of it being less than an inch in length. Thru personal contacts with the farmers and surveys made by the agriculture students, it was found that there were three different varieties yielding long and short staples. These were Half and Half, Rowden, and Mars Rose. A greater number of farmers knew practically nothing about their cotton seed.

The use of mixed varieties and uneven staple lengths had been practiced as far back as growers could remember. The cotton buyers informed the farmers that a longer length of staple would bring from one to one and one-half cents per pound more than the short-staple cotton. This meant that the farmers were losing around $7.50 per bale on their cotton.

The challenge that faced the writer was to get the cotton growers to grow the variety of cotton best adapted to the community, for all to grow the same variety, and at the same time use the best harvesting methods.

### Evening Classes Expanded

To accomplish this, the writer started an evening-class program on cotton improvement. Experiment station results were examined very closely to choose the cotton variety that would bring the most money per acre. It was found that Delta Pine Land variety was one of the outstanding varieties for hill land in north Louisiana. Classes were held in 1937-38 in all communities in the school area on cotton varieties and cotton harvesting. It was brought out in evening-class instruction that the best practices for harvesting cotton were not being used by the growers, and that the D. P. L. cotton would be better adapted to our conditions and to the demand than the varieties grown.

In 1937 a few farmers in each community purchased some of the new seed, but the majority of the farmers were a little skeptical about the new cotton. At marketing time in the fall of 1937 the farmers who planted the D. P. L. cotton realized a better price per pound for their cotton because the staple was longer than the other cotton marketed.

In 1938 more emphasis was placed on the cotton-improvement work thru evening-class instruction, and publicity was given in the local paper.

### Results

As a result of evening-class instruction, each of the communities was organized into a one-variety cotton community. The ginners set aside a special gin day for the "one-variety" growers so that the farmers could keep their seed pure and prevent "bale plating" with shorter staple varieties.

After two years of evening-class instruction, about 75 percent of the farmers were growing the same variety. The buyers began to look upon the one-variety program with great favor and encouraged it because it meant money to the grower, the buyers, and to the business in general.

A big problem faced in 1938 was that of securing good, cheap seed, and of keeping it pure. Since the major portion of the cotton growers used D. P. L., the ginners were asked to set aside gin days for them. This was done, and the problem of keeping seed pure by preventing variety mixing at the gin was solved.

After the program had been in operation for three years, it was found by the growers that the seed began to run out and that it was expensive for each grower to purchase new seed. This problem was solved by having a few growers in each community buy foundation seed each year directly from the breeder, plant it, and exchange the seed produced at the rate of three bushels of gin-run seed for two bushels of the foundation seed. The gin-run seed was usually fed to livestock or sold to the oil mills.

After three years all of the cotton growers grew only one variety and each organization was functioning to the interest of the growers. In 1941 there were seven communities with a one-variety organization. Seeing the need for one set of officers that would serve all the small organizations, three representatives were selected from each small organization to attend a meeting at which a president, vice-president, and secretary-treasurer were elected to serve for the merged organizations.

At the time of the election of officers, 3,400 lbs. of "D. P. L. 12" foundation seed were distributed to the 30 selected growers of foundation seed for the members of the newly formed North Bossier One-Variety Cotton Growers Association.

The officers of the Association have already arranged to have cotton classed free by the Federal cotton-classing service, and to have cotton wrapped in cotton bagging.

It is estimated that the farmers are annually realizing $29,400 more for their cotton crop than they did prior to 1937. This has been made possible thru evening-class instruction on the improvement of staple length and uniformity and use of an improved cotton variety.

# Part-Time Students in Homemaking and Agriculture Have Bi-County Programs

STEWART C. HULSLANDER, Vocational Education Adviser, and
I. MILDRED TITUS, Home Economics Education Adviser,
Wyoming-Sullivan Counties, Tunkhannock, Pennsylvania

TO FULFILL a definite need for further training in vocational education in homemaking and agriculture for the young, out-of-school men and women of Wyoming and Sullivan Counties, Pennsylvania, the vocational-education service of the public schools has been extended to include these young people in a program of part-time education.

### Purposes of the Organization

The local groups have joined together into a bi-county organization known as the Sulwyco Part-Time Education Association. This co-operative group has set up the following purposes for their organization:

1. To encourage educational activities.
2. To provide wholesome, social, recreational activities.
3. To give experience in co-operative activities.
4. To provide opportunities for leadership training.
5. To develop an organization consciousness.
6. To assist in establishment in farming and homemaking.
7. To promote citizenship.
8. To lend group assistance on individual problems.

Characteristic of this organization is the fact that these young people have the direct responsibility for the conduct of their organization without domination of any adult or adult groups. The homemaking education adviser and the vocational education adviser, with the teachers of homemaking and agriculture, form an advisory group for this organization.

The Sulwyco Association meets four times a year. In planning their programs these young people are guided by the following points:

1. The program should be of enough general interest for all members.
2. The program should be fundamentally educational in nature.
3. The program, whenever possible, should include members of the group.
4. A portion of the program should make possible the participation of every member.

In the local groups the programs are built around a systematic plan of instruction under the direction of the public schools. These programs, which are organized on a year-round basis, include the following types of meetings:

1. Group-organization meetings which permit the group to come together once a month for a regular business, social, and instructive meeting of the organization.
2. Unit courses of intensified study of a particular related phase of agriculture or homemaking.

Officers of the Sulwyco Bi-County part-time home economics and agricultural education association, Wyoming-Sullivan Counties, Pennsylvania. The girl officer was not present when this picture was taken

3. General, unit courses which provide training in related fields of the intensified study units.
4. Special activities which include tours, trips, and special events.
5. Emergency, unit courses which make possible group action on any special emergency problem which may arise.
6. Individual instruction thru a supervised practice program and follow-up work.

### A Typical Quarterly Meeting

A typical Sulwyco Part-Time Education Association program is as follows:

*Meeting place*: Auditorium, Falls-Overfield High School, Mill City, Pa., Wednesday, October 16, 1940. 8 P.M.

*Business Meeting*

1. Meeting called to order—President
2. Roll call by groups
3. Reports of secretary
4. Report of treasurer
5. Report of committees: program, social, refreshment, and recreation
6. Unfinished business
7. New business
8. Reports of delegates to Pennsylvania Country Life Association

*Address*—"Rural Leadership"—Dr. M. E. John, Dept. Rural Sociology, Pennsylvania State College

*Panel Discussion*
Theme—"Community Leadership Problems"

*Folk Games and Dances*—Miss Virginia Northrup, Tunkhannock Borough Schools—Leader

*Refreshments and adjournment.*

# Assisting Teachers of Adult Classes in the Northwest

J. W. JARVIS, Agricultural Agent, Union Pacific Railroad, Boise, Idaho

GOOD potatoes may be produced but can be damaged by improper methods of handling. With this in mind an evening-school program on potato production was developed for use by teachers of agriculture in Union Pacific Railroad territory. The outline was prepared on a 10-meeting basis and included the growing, digging, storing, sorting, transportation, and marketing of potatoes.

The outline was successfully used in evening-school classes in Idaho and Oregon during the early winter of 1940 and 1941. Before the program was used in these states it was approved by Mr. William Kerr, Idaho State Supervisor of Agriculture, and presented to the teachers at the Idaho Vocational Agricultural Conference in 1939. It was discussed by Mr. R. W. Gregory, specialist in agricultural education of the United States Office of Education at the conference. The method of approach for each meeting was taken up by Dr. Gregory. Mr. Earl R. Cooley, supervisor of agriculture in Oregon, also reviewed the program.

Agricultural agents of the Union Pacific Railroad handled one meeting on the shipping of potatoes and assisted with another meeting by showing motion pictures on harvesting and handling potatoes and slides on potato diseases common to Idaho and Oregon.

In 1941 this evening-school program was extended to Utah, Wyoming, Colorado, and Nebraska. Agricultural agents of the Union Pacific, being familiar with transportation problems and the problems of the potato growers, were called on to assist with these meetings. These men have had training in conducting evening-school classes and are willing to assist in discussing the problem of transportation. Transportation has received little consideration in the past but it is important that a grower understand the transportation of his products in order to market his crop properly.

A list of co-operating agencies, a copy of the program, and a letter explaining

the school were mailed to the agricultural instructors for their use.

In Idaho and Oregon a potato improvement program was being carried forward by State and Federal agencies, shippers, potato-growers' associations, and the Union Pacific. Each agency did its part by encouraging the production of better quality potatoes and by assisting in presenting methods to help increase the yield per acre. The agricultural instructors did their part by holding 16 evening schools on potatoes using the outlines prepared.

Preventing livestock losses on the farm and in shipping have been successfully taught in farmers' evening-school classes on Livestock Feeding and Livestock Management at Nyssa and Ontario, Oregon, during February, 1941.

Classes planned in many schools were curtailed this year because of National Defense classes. Many instructors in Oregon, Idaho, and Washington have been teaching information on livestock losses. In order to have something definite to follow in teaching livestock loss prevention, an outline of two meetings was prepared to be used in connection with a 10-meeting school. This outline covered the prevention of livestock losses on the farm and in shipping. Questions to be used in the meetings, and the agencies that could give assistance, were listed for use by the teachers of agriculture. In connection with evening-school classes a livestock-loss-prevention survey report for individual farms was made by the farmers attending the first class. These surveys were discussed at the second meeting. Motion pictures prepared by the National Livestock Loss Prevention Board were furnished and discussed by agricultural representatives of the Union Pacific Railroad. The pictures showed what causes loss and damage to livestock and how to prevent loss and damage.

A letter discussing the subject, with copies of the outline, questions, and surveys were sent to all instructors in the Northwest served by the Union Pacific. This was done by the railroad agricultural department after many teachers had requested assistance in conducting the loss-prevention meetings.

The outline successfully used is as follows:

I. Preventing livestock losses on the farm (cattle, sheep, hogs)
   1. List points that cause losses:
      (a) In barn and barn lots
      (b) In feed pens
      (c) In fields
      (d) In loading
      (e) Disease and parasites
   2. Preventing or correcting causes of loss
      (a) Proper fencing, gates, gate hooks, barns
      (b) Hand hurdles, dividing hurdles
      (c) Loading chutes (portable, stationary)
      (d) Control of disease and parasites
   3. Making survey of individual farms represented at meeting.

II. Preventing livestock losses in shipping (cattle, sheep, hogs)
   1. List points that cause bruises, injury, or crippling:
      (a) In stock yards, loading chutes, cars, trucks
      (b) In transit or en route to market
      (c) At destinations
      (d) Mixed shipments
   2. Preventing or correcting these losses
      (a) Proper yards, chutes, cars
      (b) Let stock take their time
      (c) Using slappers, electric prod poles
      (d) Ordering cars (sufficient room for stock—number of stock to car—weight of total load)
      (e) Partitions in shipping mixed loads
      (f) Billing cars
      (g) Feeding in transit
      (h) Fast rail service (give rail schedules)
      (i) Higher price for rail-shipped stock
      (j) At destination
   3. Cost of losses to the farmer
      (a) National, state, county (annually)
      (b) Packers' use of damaged meat

(Continued on page 38)

# National Defense and Part-Time Education in Agriculture in Pennsylvania

RUSSELL B. DICKERSON, Teacher Education, State College, Pennsylvania

R. B. Dickerson

ABOUT December 15, 1940, teachers of vocational agriculture in Pennsylvania, including the 35 area advisers, put their "left shoulders to the wheel" in the interest of the out-of-school-youth national-defense or replacement-supply program. At the close of April, 1941, 376 schools were operating in this program in 191 rural centers, with approximately 7,000 out-of-school young men enrolled. When the call came to launch this program, teachers of vocational agriculture thruout Pennsylvania were in a strategic position with respect to locating out-of-school youth in their respective areas and to promoting the training program among them.

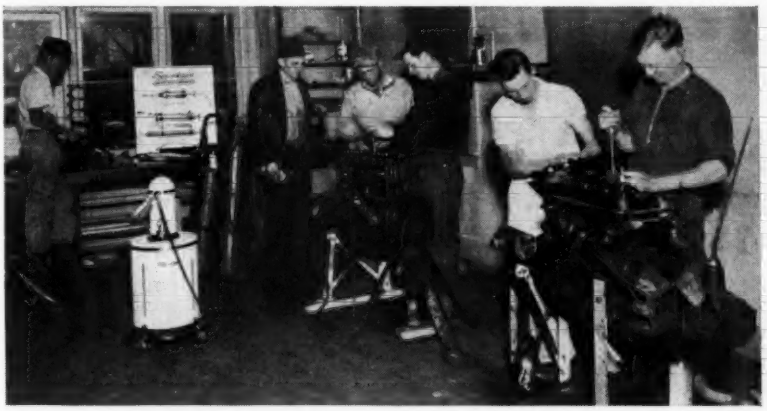
It was apparent from the beginning of this emergency measure that the teachers felt that it should not displace part-time education programs already organized for out-of-school youth. Rather, they were inclined to so organize their efforts that the replacement-supply program would supplement the part-time program instead of displacing or even overlapping any of its functions. This was especially important since the part-time schools are organized on a year-round basis and are set up as a long-time program.

### Part-Time Classes Not Displaced

Thus, it is plainly seen that Pennsylvania teachers of agriculture kept their "right shoulders to the wheel" in the interest of maintaining their part-time programs on a level comparable to an otherwise normal period. One county adviser reported, for example, that in addition to maintaining all of the part-time schools in his supervisory area, an additional one had been added, bringing the total to seven, or one for each teacher in the county. In this same area, 14 replacement-supply schools were operating, with 216 enrolled.

In addition to teaching in part-time classes and assisting in the organizing and conducting of the replacement-supply schools, these same teachers of vocational agriculture have participated in much of the actual training in the defense courses being given in their centers. In this way they have increased their knowledge and have improved in a number of skills in the courses being given.

Teachers of agriculture, along with many other workers in vocational education, have learned important lessons from the replacement-supply program. Among these at least three are particularly significant. First, the members of the replacement-supply schools have attended classes for the purpose of securing practical instruction, which has of necessity provided participating experience both in doing and in thinking thru a job or a problem. The objective nature of the program has attracted many rural youth who had not previously been attracted by the part-time program. Secondly, a thoro knowledge of subject matter on the part of the instructor has been demonstrated as a paramount factor in the continued interest, progress, and success of the majority of the



Automotive class at Edinboro, Erie County, Pennsylvania. Second from left is Vincent Sherwood, Instructor

At the close of April, 1941, 1,783 out-of-school young men had been enrolled in 102 part-time schools in Pennsylvania thruout the fall-and-winter period. Many of these part-time groups continued to meet monthly after formal classes were over. Only 23 part-time schools were reported as having been dropped or temporarily closed in favor of the replacement-supply program. These had previously been conducted by the county agricultural-education advisers, whose duties were so increased in the administration of the emergency program that time did not permit them

(Continued on page 35)

L. B. POLLOM

# Farm Mechanics

## The Farm-Mechanics Program and the Young Man out of School

M. R. WILSON, Instructor in Farm Mechanics Skills and Methods, Kansas State College

M. R. Wilson

SEVERAL years ago Dr. Prosser, one of the leaders in the field of vocational education, said, "One of the things that will do the most good for agriculture is improvement in farm mechanics." His remark was one of the contributing factors which led me from trade and industrial education into farm mechanics.

One of the important phases of our work is that of getting our young men established in farming. Working with the part-time group in preference to the evening-school group, and in connection with our day-school group, I believe we have some chance to do something about this.

Thru the day-school group and the part-time group, we may make progress in getting these young men established in farming. We should work on this constantly from the time a boy enters our field until we have given him everything we can in the part-time classes in agriculture.

One of the things constantly held before me in the field of trade and industry for the nine years I was connected with that phase of vocational education was this: "How many of these men are being placed in jobs for which they have been trained?" If we cannot place at least 60 percent of our young men in the business of farming, I believe we have missed our mark.

What can we do with our part-time youth in farm mechanics to get them established in farming? Any point I make in these lines is soon forgotten, but if we keep our objective constantly in mind and drive on this problem, we can get some place. After all, if we can't show results in establishing young men in farming, we are not proving the worth of this type of training.

### Opportunities Thru Farm Mechanics

What are the possibilities in part-time farm mechanics to help a boy get established in farming? Too often the boy takes the livestock accumulated during school years, and trades it for farm machinery in order to get established. Is this good practice? Probably not. Yet one must have farm machinery, for the first thing the landlord asks of any prospective renter is "Do you have the necessary equipment to handle this farm?"

One possibility is for the boy to earn an interest in some farm machinery by working on it, repairing it, and getting it in first-class shape. He may work for his uncle or close friend, but the objectionable feature of this is that a landlord knows his land and crops may suffer if there is another partner to be considered at the time crops need attention.

Another possibility is to encourage boys, while in school, to begin to accumulate used farm machinery and to repair it, and to continue this practice in part-time work.

Any machinery purchased by boys should be carefully inspected for age and amount of repairs necessary. Three or four boys may be encouraged to form a small co-operative and purchase machinery. The objectionable feature of this plan is that some scheme must be worked out so that they will understand who is to use the machinery at certain times.

A trailer for young men who are already established is a good project, but has doubtful value from the standpoint of getting a young man established in farming. A boy needs a plow, harrow, and seeding machinery. In some localities he may need a tractor, plow, combine, and seeding machinery, which will run into a considerable amount of money.

A TYPICAL setup in eastern Kansas is as follows:

| | |
|---|---|
| 3 cultivators | 1 lister |
| 1 corn planter | 1 grain binder |
| 1 disk | 2 box wagons |
| 1 harrow | 1 hay rack |
| 1 two-bottom, gang plow | 1 hay rake |
| | 1 mowing machine |
| 1 sulky plow | 6 to 8 head of work horses |
| 1 walking plow | |

Farming 160 to 220 acres.
Crops: Corn, wheat, oats, flax, sorghum, soybeans, alfalfa, red clover, and considerable native pasture land, as dual-purpose cattle were kept.

You may find a farmer who is just going thru the transition period from horse-drawn machinery to tractor implements. Why isn't this an opportunity to secure implements of this kind quite inexpensively?

One of the biggest faults of the average farmer is that he does not want to be bothered with fixing anything. You and I are more or less inclined to be the same way. We trade our cars off long before it is necessary, and plunge heavily into debt, just because we don't want to be bothered. But the boy who has a burning desire to become established in farming will put up with some of the inconveniences of old tractors and old machinery providing the instructor has emphasized that idea thruout a boy's school career by keeping constantly before him that vocational agriculture, to grow, must constantly get more and more boys and young men established in the business of farming, and at the same time avoid excessive debt.

Here is a typical layout at Bazie, Kansas, which is pretty well toward the western part of the state:

| | |
|---|---|
| 2 Case tractors | 2 Chevrolet trucks |
| 2 John Deere tractors | Listers |
| | Spring-tooth harrows |
| 3 Case combines | |
| 3 Oliver plows | Spike-tooth harrows |
| 4 Moline 10' one-ways | 3 Dempster drills |

Total for this equipment is $10,650.

This man owns 800 acres and rents 1120 acres. He raises wheat, sorghum, and alfalfa.

This sort of a layout would be beyond the fondest dreams of the boy in vocational agriculture unless he fell heir to a part of the Irish Sweepstakes.

After all is said and done, it is one of our responsibilities to assist young men to become established in farming. Are we just training young men for imaginary opportunities, or are we *preparing* them for real opportunities?

There are about three ways in which a young man can get into farming: by marriage, by inheritance, or by working his way in.

There is the possibility of developing the trading instinct in some of these boys if they purchase used machinery and repair and paint it. If they will then resell it they may bring in machinery more suited to their needs, or trade this machinery they have repaired for other machinery more suitable.

It is just as logical for a boy to carry shop projects that have the possibility of commercial return as it is to carry a livestock or crop project. Just as much care should be exercised on the part of the instructor in helping a boy select machinery projects as livestock projects. For instance, the age of any machine, ease of obtaining parts, the number and cost of repairs should all be carefully analyzed before jumping into any project too heavily.

### Summary

To enumerate again some of the possibilities the boy has of accumulating some machinery which will aid him in getting established in farming the following are listed:

1. Encourage the boy to accumulate farm machinery as soon as he enters the first class and to repair it in the shop.
2. Encourage the boy to accumulate an interest in some farm machinery thru work contributed toward its repair. Labor as well as capital is needed in any enterprise.
3. Encourage several boys to form a co-operative for the purpose of accumulating farm machinery to be used in helping them to become established in farming.
4. Encourage the boy to do some trading with the farm machinery, using the shop as a place to repair and paint this machinery so that it will increase in price to the extent that its selling price will enable a boy to secure a piece of machinery more suitable to his needs, or to use such profit to purchase additional machinery.

## National Defense

(Continued from page 33)

schools. Thirdly, the replacement-supply program has furnished a definite appeal, and has incited a real desire in members to prepare themselves so that they can go out and do the things that they want to do most.

Accordingly, many members of the replacement-supply schools have qualified for and taken positions either in defense industries or among the utility industries. This program has provided "a way out" for many young men who were living on farms and were farming, but who were not farmers at heart.

### Implications for Part-Time Classes

These observations have several implications which correlate with similar observations of part-time schools where farm mechanics occupy a prominent position in the course of study. In the first place, members of part-time schools in the future will be attracted in proportion as the amount of the instruction providing participating experience, both manual and mental in nature, is practicable. The entire part-time program will need to be more utilitarian than it has ever been if out-of-school young men are to be expected to enroll.

As a second implication, teachers of part-time schools must be thoroly competent to teach in accordance with the needs, interests, and desires of the young men enrolled, or be prepared to call upon local talent for assistance.

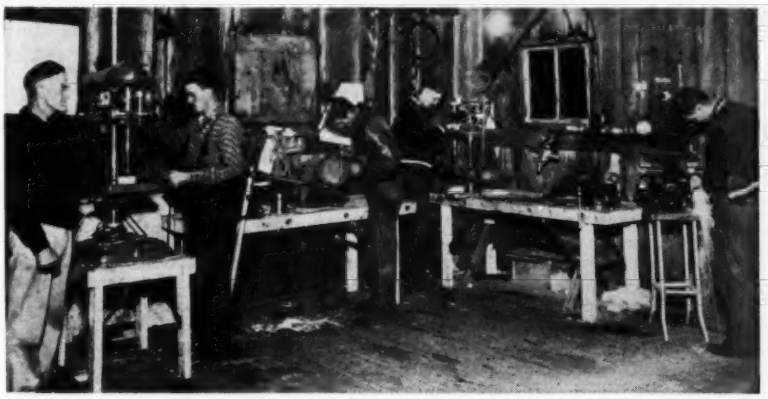
No finer example of good teaching (involving a thoro knowledge of subject matter and skills) can be cited than that of an instructor in a national-defense A-2 course. This instructor had been a blacksmith for 50 years. Prior to the organization of the A-2 course, he had never taught a class, but he was so thoroly familiar with the knowledge and skills required that he taught with the utmost competence and ease. The members of his class were so enthused with the degree of competence they themselves were acquiring from this instructor that it was necessary to turn out the lights at the close of the class periods to get them to go home.

Such men are available in every rural community whether they are in the field of blacksmithing, livestock farming, fruit growing, or banking. They are specialists in their respective fields of endeavor and are ready and willing to lend a hand in the instructional program of a local part-time school. It will behoove teachers of agriculture to locate these men and to use them in future part-time classes.

### Trend Toward Mechanized Farming

A third implication is that many of our out-of-school farm youth will be encouraged to remain on the farm in proportion as the part-time program is planned to prepare them to farm competently with machinery. This is the trend, and granting that an out-of-school farm youth is mechanically inclined, he may be encouraged to remain on the farm or be attracted into industry. The part-time school program can furnish "what it takes" to maintain and further develop his interest and training in farming if he follows the natural dictates of his conscience.

National-defense class in woodworking, Shickshinny, Luzerne County, Pennsylvania



Skills in general metal work are taught in this national-defense training class at Wattsburg, Pennsylvania. Some of the students were formerly enrolled in vocational agriculture

One Pennsylvania agricultural teacher who has his part-time program organized on a long-time basis is teaching some farm mechanics each year. For example, the major enterprise in 1939 was egg production, and in 1940, it was milk production, but in addition to the emphasis on the major enterprise, farm mechanics was taught as a contributory enterprise each year. This practice has a real appeal to the members of that part-time school and it provides enough objectivity that interest is maintained year after year.

It is reasonable to expect that, after the replacement-supply program has ceased, some of the enrollees who were not previously enrolled in the part-time school will desire to continue their training by enrolling in it. This should be a planned, direct outcome of the emergency-training program. The teacher should be ready to respond to the desires of these new members.

### Co-ordinating the Two Programs

Co-ordination of the two programs (replacement-supply and part-time) may be accomplished very naturally thru the medium of the monthly meetings of the Young Farmers' Association. A specific objective of the association could be the inclusion of the two groups in the monthly meetings with programs designed accordingly. Programs for the two groups, meeting as one, could include discussions on health and physical education, citizenship education, leadership training, and principles of democratic society. To be effective, national defense in all its branches must begin in the heart and mind of every American youth. National-defense preparedness embodies more than preparing to properly shoulder a gun; it is preparing to defend democratic principles.

Finally, the local teacher of agriculture should participate in as much of the actual training in one or more of the four courses as time and energy permit. It will be an excellent means of increasing his knowledge and skills in many phases of the four course areas, thus making him a more competent teacher and more specifically prepared to give individual instruction to many of the defense enrollees who may continue in the part-time program and remain in the community as the farmers of tomorrow.

Regardless of how long the defense program continues or what continued strife across the waters may mean to this country, there will still be farms to farm and young men to be trained to farm them. The completeness of the preparation of the teacher of agriculture will quite naturally influence the success of the farming of these young men, as it ever has. We, therefore, must take some lessons from the replacement-supply schools and be prepared to take up with these young men as, and when, the defense era returns them to the farms.

# Studies and Investigations

C. S. ANDERSON

## The Derivation of Content for Instruction in Soil Conservation*

RALPH BENTON, Teacher, Columbus, Nebraska

Ralph Benton

THE purpose of this study was to determine the subject matter that should be included in a teaching unit on soil and moisture conservation for boys in high school. The basis for this unit was the need for instruction as shown by a study of certain well-distributed farms in the patronage area of the Malvern, Iowa, high school.

The patronage area of the Malvern high school was chosen as a type for this study because the writer, at the time, was employed by the United States Soil Conservation Service and stationed in Malvern. Then, too, the farms in this study are located in a community where the effects of erosion are apparent, and where the Soil Conservation Service was carrying on erosion-control demonstrations.

### Nature and Sources of Data

In gathering data a careful study was made of actual conditions upon 20 representative farms in the patronage area. A questionnaire was used in interviews to secure information from farmers relative to soil erosion, cropping systems, crop acreages and yields, and general management. This personal interview was supplemented by information in the form of books and bulletins written by experts in the fields of soil and moisture conservation, and published by the United States Department of Agriculture and state experimental farms and stations. Soil surveys were made of each farm used in the study in order to determine soil type, general topography, and the degree of erosion that had taken place. Records of the United States Department of Agriculture weather bureau station at Glenwood, Iowa, were studied for information relative to precipitation in Mills County.

The farms selected for the survey were chosen with the thought in mind that they should be fairly well distributed thruout the patronage area and representative of the different soil types, and that there be an equal number of owner-operated and tenant-operated farms.

It was thought that the tenant-operated farms might show a greater degree of erosion and be less productive. This thought was based upon the assumption that tenants as a class do not have as great a personal interest in the land as do the owner-operators and would be less likely to follow the best of management practices.

Of the 20 farms selected, 10 were owner-operated and 10 were tenant-operated. The average size of the farms was 217 acres.

Few of the farmers interviewed had any knowledge of the soil types and of other pertinent facts pertaining to the soil and the extent of erosion on their farms. This information was secured by studying conservation survey maps on those farms already mapped by the Soil Conservation Service and by personally mapping the others. Data relative to soil types, percent of slope, depth of virgin soil, percent of topsoil lost, and inches of topsoil remaining were determined.

The 20 farms were studied and a comparison made of those that were owner-operated with those that were tenant-operated with respect to the following items:

1. Owner-operated or tenant-operated
2. Number of acres in the farm
3. Length of tenure on the farm
4. Number of years the farm has been cultivated
5. Kind of crop rotation being used
6. Loads of barnyard manure returned to the soil each year
7. Number of acres devoted to different crops each year
8. Crop yields
9. Contour tillage or straight-row farming
10. Use of commercial fertilizer
11. Soil types represented on the farm
12. Acres of hill-land or bottomland per farm
13. Steepness of the slopes
14. Conditions of gullies on the farm
15. Depth of the virgin soil
16. Percent of topsoil lost
17. Inches of topsoil remaining

### How Tenant-Operated and Owner-Operated Farms Compared

After all the data had been gathered an analysis and a comparison showed that, based on averages, the 10 owner-operated farms had 78 percent of the total farm acreage as tillable land, 10 percent as permanent pasture, 3.5 percent as permanent hay, and 8.5 percent as timber, roads, lots, and waste land. The 10 tenant-operated farms had 86.6 percent of the total farm acreages as tillable land, 5.5 percent permanent pasture, 2.7 percent permanent hay, and 5.2 percent in timber, roads, lots, and waste land.

The owner-operators had lived on their farms an average of 33 years. During this period they had reduced their corn acreages 22 percent and, at the same time, increased their yields an average of 25 percent. The oats acreages were reduced 31.4 percent and the yields increased 12 percent per acre. The wheat acreages had been lowered 27.2 percent and, during the same time, yields fell 12 percent. During the 33 years the legume acreages (clovers) had been increased 42 percent.

The increases in yields of the owner-operators were due largely to improved varieties and to the increased use of legumes in rotation.

The tenant-operated farms had been farmed by the present tenants for an average of eight and two-thirds years. During this period they had reduced their corn acreages 15.9 percent and increased the yields 12 percent. The oats acreages were reduced 11.9 percent and the yields were also lowered 9.9 percent. The wheat acreages showed a definite increase of 35.5 percent but, at the same time, there was a 20 percent decrease in yields. During the eight and two-thirds years the tenants had reduced their legume acreages 19.5 percent.

A few of the operators followed no definite system of crop rotation. Those who did usually followed a system of "corn-corn-small grain, seeded with sweet clover." Some farmers plowed the sweet clover under for green manure and others let it stand for pasture and for seed. The operators could not give definite information on the effect of their rotations on crop yields.

The amount of barnyard manure available was small. By using only a light application, the owner-operators could cover an average of 15.8 percent of their crop land yearly and the tenant-operators could cover approximately 12.2 percent of their crop land. This meant that all 20 farm operators had to rely upon other methods to a large extent for keeping up soil fertility.

Only two farmers had used lime. However, soil tests showed a lime deficiency of one to two tons per acre.

A study of the soil conditions showed that the 20 farms had 33.1 percent of their total acreages as bottomland, which included all land with less than a three percent slope. Thirty-four and three-tenths percent of the total acreage was in the three- to eight-percent-slope class, 32.6 percent of the total acreage was in the nine-percent-and-over-slope class. Seventeen of the 20 farms were definitely "hilly." Fifteen of the 17 had severe gullies active upon them.

The bottomland soils had no apparent erosion. The original topsoil on the slopes averaged 12 inches deep. On the cultivated land with a three- to eight-percent slope, an average of 50 percent erosion had taken place, resulting in a loss of approximately six inches of topsoil and leaving six inches on the fields.

An average of 75-percent degree of erosion had occurred on the cultivated land with a slope of nine percent or more. This caused an average loss of nine inches of topsoil leaving only three inches of the original topsoil.

Marshall silt loam, a deep, friable, dark, grayish-brown soil with a surface soil 10 to 14 inches deep, covers all the rolling land, and is the predominate soil type of the patronage area.

Wabash silt loam with a very dark, grayish-brown, or nearly black surface soil 12 to 18 inches deep is the most important bottomland soil.

An analysis of the records of the Federal Weather Bureau at Glenwood, Iowa, the county seat of Mills County,

showed that the county has a 21-year average of 28.62 inches annual precipitation. During the growing season of May, June, July, and August, 50.16 percent of the annual precipitation occurred. Seven and a half inches, or 23 percent, of the rainfall occurs in May and June when the cultivated soil is in a loose, friable condition and is most liable to erode. The county is also subject to rainfalls of high intensity which result in high runoff on the land, with severe erosion occurring on cultivated soil.

A study of the data assembled in this study indicates that the following approved practices will give best results as control measures:

1. Contour tillage
2. Contour-buffer-strip cropping
3. Terracing
4. Use of crop rotation
5. Developing permanent vegetation
6. Making grand waterways
7. Gully control

### Use of Data in Course Construction

The data obtained by this survey are of such nature that they can be used for instructional purposes for boys regularly enrolled in high school; for part-time classes of young farmers out of school, but not established in farming for themselves; and for adult farmers in evening classes.

### Boys in High School

The study of the condition on the 20 farms in the patronage area of the Malvern high school has revealed an immediate need for instruction in soil conservation. The survey and the questionnaire have provided an abundance of information related to the existing soil conditions and the tillage practices being followed by the local farmers.

The problems determined from these accumulated data will form the basis of this course in soil conservation. This material, coming from the local community, will make it more interesting to the boys. The lessons will be made useful and practical by adapting them to the needs and conditions of the farms in the patronage area.

### Adult Farmers

When using the teaching material on soil conservation for adult farmers it should be given as a separate course unit for a complete series of lessons.

Perhaps some of these farmers are already aware of, and interested in their erosion problems, and the subject matter will require considerable motivation. A survey of the farms in the community relative to soil erosion and its effects, with the results summarized and presented, will make the subject interesting to these farmers, especially if one or more of their own farms is included in the survey.

The adult farmer, actively managing and farming his own farm, differs from the boy in high school largely because he wants information that is of immediate help to him in solving his problems.

### Part-Time Young Farmers

Soil conservation presented to this group should be given as a separate unit. The teaching material will require considerable motivation for these young men but if properly presented they should more readily grasp the importance of the work than the younger boys, and should be more willing to try contour farming and other control practices than the mature farmers. Tradition and the practice of many years will not have become so strongly entrenched in these young men's ways of doing things on the farm as they have with the older men.

These young men will also be more interested in the control measures and the lessons should stress methods of control. All phases of the problem should be presented. Two or more field trips, to observe or demonstrate certain practices, are valuable instructional aids.

### A Basis for the Course

In gathering data to serve as the basis for this course in soil and moisture conservation, the writer has undoubtedly spent more time and made a more complete study than any teacher could make at one time. However, this does not mean that a teacher active in the field cannot do the same thing.

With the objective in mind of building a course on soil conservation, a teacher can accumulate additional material each year relative to the problems on the farms in his community. The factual material gathered may be recorded in a notebook until the study or the survey of the patronage area is completed.

The teacher may then proceed to select from his accumulated data the material suitable for a teaching unit on conservation of soil and moisture for the boys in his high-school classes.

*Based upon a Master's thesis written under the direction of Dr. H. E. Bradford, Department of Vocational Education, University of Nebraska.

## Training For Tenant Farmers

J. B. TAYLOR, Teacher,
Chillicothe, Illinois

For some years the writer has been much concerned with the young men who have completed the work in vocational agriculture and have graduated from high school. Some of the graduates have been able to work out partnership plans with their fathers, but in most cases the home farms could not absorb many of these young men. The increasing use of farm tractors and other labor-saving devices has added to the problems, because these changes have made it possible for the farm operator to farm more land with less help.

What practical use could young farm men make of the training they have received in vocational agriculture? It's a question that faces many teachers of agriculture.

Since so many farms in the community are operated by tenants, the writer held the opinion that some of these young men could be established on rented farms in the community.

The major purpose of this study was to discover characteristics and qualifications desired by landlords in tenants.

To obtain the data from landlords, an inquiry blank was prepared. A second inquiry blank was drawn up for submission to tenants. With the exception of four landlords who were contacted by mail, all information was secured thru personal interviews conducted by the writer. Thirty landlords furnished information used and 10 renters were selected and their opinions and experience used as a check on the results obtained from the information furnished by owners.

Results of the study seem to show that there is satisfactory employment for farm tenants. Income from a majority of the farms has been sufficient to support a family in comfort. Homes are comfortable. Electricity is available on one-half of the farms and rapidly becoming available on others. Roads are passable thruout the whole year. Practically all of the leases are crop-share-cash leases, renewable annually, and are proving satisfactory.

All the landlords interviewed showed a willingness to co-operate with tenants in maintaining and improving the farm home and all were carrying on soil improvement practices. In some cases the soil improvement work is done co-operatively, with the tenant reimbursed if he leaves the farm. In other cases the landlord assumes the expense of the improvement practice. Living conditions should be as good on these farms in the future as they are at present, and the production and income should be better.

The equipment called for on these farms is quite extensive and would require considerable investment. Many of the owners expressed a willingness to assist in financing a renter and all seemed to feel that any tenant who could secure a tractor would have no trouble arranging for other necessary machinery. Some livestock is desirable, but under the typical lease the livestock is largely left to the tenant's decision.

### What Do Landlords Look For?

Questions were asked to determine what should be taught to prospective tenants in order to train them as people choosing tenants want them trained. All those interviewed want renters with good reading habits. Daily papers, experiment station publications, and farm papers were popular in the order named. High-school agriculture training was considered valuable by all but three, and 4-H Club work by all but four of the 30 landlords. The expectation of owning a farm is evidently a desirable trait. The tenant should expect to attend public meetings but community leadership was not asked for by a majority of those answering. One-half of the landlords saw no advantage in high-school graduation.

A number of skills commonly taught in high-school agriculture courses were listed and the landlords were asked to indicate those which would make the tenant better qualified. Identifying crop seeds and weed seeds, treating grains for smut, and knowing insects and their control were all listed by practically all those interviewed as being desirable. Testing soils, balancing rations, selecting livestock, castrating, butchering, woodworking, and operating and repairing gas engines were listed by substantial majorities. Pruning trees, identifying hybrids, testing milk, soldering, and hot iron work were chosen by ap-

proximately half of those expressing themselves. Running a surveyor's level and caponizing were among those which were asked for by a small number.

The 10 tenants chosen (who, in the opinion of landlords, are superior tenants) gave answers which were summarized and tabulated as a check on the answers given by the landlords. The rankings corresponded closely to those of the summaries of the answers given by the landlords. The only important difference is the listing of the care and repair of gas engines in first place by answers from tenants.

Many of the landlords, in addition to supplying the information asked for, stressed such characteristics as honesty, integrity, industry, and co-operation.

In this study all the landlords who co-operated were known personally to the writer. No response was received from agents who are handling the renting of farms for absentee landlords. This means the field was not entirely covered. Some of the answers may have been influenced somewhat because they were given to the agriculture instructor.

Altho the study was limited in scope and the time used was short the results have furnished a basis for improvement in the course of study in the agriculture department. We also have definite information to use in a program of placement and guidance.

**Factors in General Training and Habits Considered as Favorable by 29 Illinois Landlords When Choosing Tenants**

| Kinds of Habits or Training | Number of Landlords Favoring |
|---|---|
| Reading daily papers | 28 |
| Reading experiment-station publications | 27 |
| High-school agriculture training | 26 |
| 4-H Club experience | 24 |
| Reading farm publications | 24 |
| Expecting to own a farm | 24 |
| Attending public meetings | 23 |
| Membership in farm bureau | 22 |
| High-school graduation | 14 |
| Leadership in community | 12 |

**Skills Wanted by 29 Illinois Landlords**

| Skills | Number Favoring |
|---|---|
| Identifying crop seeds | 28 |
| Identifying weed seeds | 27 |
| Treating grains for smut | 26 |
| Knowing insects and control | 24 |
| Identifying plants | 24 |
| Testing soils | 21 |
| Balancing livestock rations | 20 |
| Judging and selecting livestock | 20 |
| Castrating calves | 20 |
| Castrating pigs | 19 |
| Woodworking skills | 19 |
| Butchering skills | 18 |
| Operating and repairing gas engines | 18 |
| Pruning trees | 13 |
| Identifying hybrids and parent lines | 13 |
| Testing milk and cream | 12 |
| Soldering | 12 |
| Welding chains, etc. | 10 |
| Running a surveyor's level | 6 |
| Caponizing | 1 |

## A Rebuttal

(Continued from page 27)

way prevent me from sharing with the Committee in further efforts to arrive at the right answer.

1 In the May, 1941, issue Dr. Hamlin critically analyzed the evaluation study being conducted by the National Committee on Standards. A reply by Dr. Ray Fife of Ohio appeared in the July, 1941, issue in which the work of the committee was defended, and in which Dr. Hamlin's point of view was criticized. The present article is in the nature of a rebuttal to Dr. Fife's reply. Constructive articles by other readers on the subject of evaluation will be welcome.—*Editor.*

2 Reavis (editor). *Evaluating the Work of the School.* Chicago: University of Chicago Press, 1940, p. 9–10.

## Judging

(Continued from page 29)

ards of production for livestock which serve as goals for the persons under our instruction? Are we developing the ability of farm boys and adult farmers to determine for themselves what is a good production for a given herd at a given stage of development? Standards can be expressed in terms of pounds of butterfat for dairy cows, fleece weight per ewe and lamb production per ewe at a given age of offspring, litter weight per sow at a standard age (usually 56 days), etc. Instructors who try to guide classes and individuals to set such goals will frequently find at first that the estimates made by the students are far above or far below the probabilities in the cases in question, but the process usually leads in the direction of increased accuracy and a stimulus for livestock improvement is thereby provided.

2. Even tho we may continue some of the conventional exercises in livestock judging, are we revealing its fallacies and are we supplementing it by procedures which utilize some of the newer findings previously discussed? Many farm boys and mature farmers have been led to place implicit faith in judging and it is a severe blow to them when the "bubble bursts." Instructional procedures and experiences should be devised which incorporate the application of the newer findings and reveal the fallacies of the old. For example, if classes of dairy cows are judged first by appearances and then their records of production are made known, marked discrepancies between the two approaches to selection are frequently demonstrated, and serve as a basis for stimulating discussion.

3. Are we developing abilities for keeping and using records of various kinds which are basic to livestock improvements along desired lines? These records should not be too complicated, yet they should be sufficiently comprehensive and accurate to serve the desired purpose. Some suggested items are indicated in previous portions of this article and in some of the references.

4. Are we developing abilities necessary for the intelligent purchasing and marketing of meat animals? Many farmers fail to get full value for animals which they market, largely because of ignorance of market grades, methods for preventing injuries, and other important aspects of the marketing process. Similarly, many farmers in purchasing animals for feeding fail to get the most for their money. In our classes of young farmers and adult farmers, actual experiences should be provided which develop abilities along these lines.[11]

5. Are we making definite efforts to reform and modify the conventional shows and judging contests in which the exclusive or primary emphasis continues to be placed on outward appearances? Here and there, promising changes are being made, but additional reforms are needed. Perhaps high-school fairs and local and state contests can lead the way.

In closing, the writer wishes to emphasize that changes on a broadened scale will be made possible only to the extent that teachers of vocational agriculture and others are open-minded and tolerant. In the field under discussion, persons with ingenuity and a pioneering spirit will find many challenges in the years to come.


1 Deyoe, G. P. "Keeping Pace with Science in Instruction in Livestock Selection," *Agricultural Education*, IX, Feb., 1937, p. 117.

1 ..... "Youthful Enthusiasts," *Successful Farming*, July, 1939, p. 6.

1 ..... "Antiquated vs. Modern Procedures in Livestock Selection," *The Agricultural Education Magazine*, XII, Aug., 1939, p. 23.

2 *The Sabre-Tooth Curriculum*, McGraw-Hill Book Co., Inc. 1939.

3 Cole, C. L. "Record of Performance in Sheep," *Quarterly Bulletin of Agricultural Experiment Station*, Aug., 1940, pp. 6-8, Michigan State College.

4 Knapp, Bradford. "Performance-Testing Beef Sires," *Successful Farming*, Aug., 1939, p. 9.

5 For additional evidence, many references are available. The U.S.D.A. yearbooks for 1936 and 1937 are especially valuable as references for departments of vocational agriculture.

6 Wilkinson, J. F. "They Prove Sires in Oshkosh," *The Agricultural Education Magazine*, XIII, Oct., 1940, pp. 66–67.

7 Thompson, J. I., "Selecting Swine for Future Farmers on a Performance Basis," *The Agricultural Education Magazine* XI, June, 1939, pp. 230–231.

8 Thompson, A. I. "Judges Didn't Work on Their Hogs," *Wallaces' Farmer and Iowa Homestead*, Aug., 24, 1940, p. 5.

8 Wiegand, W. G. "How Co-operatives Function as an Outgrowth of Adult Evening-School Work," *The Agricultural Education Magazine*, XIII, Nov., 1940, pp. 92–93.

9 McDonald, M. H. "Livestock Show and Marketing Days," *The Agricultural Education Magazine*, IX, June, 1937, p. 182.

9 Kerrey, T. H. "Educational Values in a Market Show," *The Agricultural Education Magazine*, XII, Feb., 1940, p. 151.

9 McPhee, Julian A. "Traditional Livestock Shows Evaluated—a California Solution," *The Agricultural Education Magazine*, XIII, Aug., 1940, pp. 36–37.

10 Deyoe, G. P. "Production and Type in Judging Dairy Cattle," *Hoard's Dairyman*, LXXXI, July 25, 1936, p. 372.

11 "Teaching the Grading of Feeder and Stocker Steers in Vocational Agriculture Classes," *Leaflet No. 4*, United States Office of Education, Vocational Division, 1940.


## Assisting Teachers

(Continued from page 33)

4. Review of survey
   (a) Discuss each farmer's survey
   (b) Show motion picture on "Livestock Loss Prevention"
   (c) Give out literature

III. Marketing (suggested third meeting following the ones above)

### Suggested Questions for Use in Meetings

I. First meeting.
1. Do you dehorn your cattle? At what age? Methods used?
2. Do you tip or half-horn cattle? Why?
3. Is shelter provided for stock? Individual? Collective?
4. Does livestock run in same barn lot with horses and mules?
5. Is farm machinery left where it may injure livestock?
6. Do you catch and lift sheep by the wool?
7. What livestock injuries do you observe on your farm?
8. Fence injuries, lack of fences, poor fences, holes, etc.
9. Losses due to crop plant sprays, insect poisons, insecticides, etc.
10. What equipment is used on the farm for loading livestock?
11. Do you ship livestock to market by train or truck or both?
12. How do your prevent diseases and parasites?

II. Second meeting
1. Is livestock shipped to market by train or truck?
2. Are mixed loads separated? How?
3. Are trucks or cars overcrowded?
4. Kind of bedding used? In summer? In winter?
5. Do you wet bedding for hogs in hot weather?
6. Are trucks equipped with wide gates to avoid hip and loin bruises?
7. Do you "jam" livestock out of cars and trucks or allow them to unload leisurely?
8. When moving or loading livestock do you use slapper? Electric prods? Clubs? Pitchfork? Canes? Or what?
9. Are double-deck trucks and loading chutes provided with cleated inclines? Are they too steep for good footing?
10. Are trucks and cars inspected and sharp projections removed?
11. Are bulls tied in shipment? What kind of tie is used?
12. Are animals filled immediately before shipment?
13. How are shipments protected from cold winds? Hot sun?
14. List safe shipping specifications found on pamphlet on "Construction of Loss Prevention Equipment"